

Translation

PATENT COOPERATION TREATY

PCT/FR2003/001295



PCT

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR2003/001295	International filing date ( <i>day/month/year</i> ) 24 avril 2003 (24.04.2003)	Priority date ( <i>day/month/year</i> ) 29 avril 2002 (29.04.2002)
International Patent Classification (IPC) or national classification and IPC C21C 1/10		
Applicant PECHINEY ELECTROMETALLURGIE		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 21 novembre 2003 (21.11.2003)	Date of completion of this report 21 May 2004 (21.05.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR2003/001295

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
 pages 1-6, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
 pages 1-12, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Intern application No.  
PCT/FR 03/01295

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-12	NO
Industrial applicability (IA)	Claims		YES
	Claims	1-12	NO

## 2. Citations and explanations

Reference is made to the following documents:

- D1: US-A-4 290 805  
D2: EP-A-0 816 522  
D3: US-A-4 432 793  
D4: PATENT ABSTRACTS OF JAPAN vol. 018, no. 170 (C-1182), 23 March 1994 & JP 05 331590 A

The present application does not satisfy the conditions stipulated in PCT Article 33(1), since the subject matter of claims 1 to 12 does not involve an inventive step as defined by PCT Article 33(3).

Each of documents D2, D3 or D4, which are considered to be the prior art closest to the subject matter of **claim 1**, describes ferro-silicon inoculating alloys for liquid cast iron, as defined in the preamble of claim 1.

The subject matter of claim 1 differs from these known alloys in that lanthanum constitutes more than 90 % of the rare-earth metals present therein.

The subject matter of claim 1 is therefore novel, but does not involve an inventive step for the following reasons.

The problem that the present invention is intended to solve is that of enabling effective inoculation while preventing microporosities from forming in the cast iron.

This problem is known from D1. According to D1, by using pure lanthanum or a preponderance thereof relative to the other rare-earth elements, preferably in a ratio (of lanthanum to other rare-earth elements) greater than 10 to 1, i.e. by replacing all or most of the mischmetal with lanthanum, the functions of inoculation and reducing microshrinkages and other porosities can both be achieved. Lanthanum is added to conventional inoculating alloys, such as ferro-silicon, to form Le-Fe-Si alloys, for example (see D1, column 1, lines 9 to 33; column 2, lines 18 to 53 and 61 to 68; examples and claims 5 to 11).

Taking the teaching of D2, D3 or D4 as starting point, it is therefore obvious, on reading D1, to solve the problem addressed by the invention by adding lanthanum as claimed.

Consequently, claim 1 fails to meet the requirements of inventive step (PCT Article 33(3)).

**Dependent claims 2 to 12** relate to features that are known from the cited documents or, on the basis of routine practice, can be implemented by a person skilled in the art without exercising inventive skill.